

Amendments to the Claims:

1. (currently amended) A scan conversion apparatus comprising:
at least one field buffer;
at least one field motion estimator receiving image input of interlaced scanning format from said at least one field buffer, said image input including a current field and at least one reference field;
at least one field motion compensator operatively coupled between said at least one field buffer and said at least one field motion estimator, said at least one field motion compensator adapted to restore at least one missing line of said current field using motion information from an optimally spaced adjacent reference field when said optimally spaced adjacent reference field is unevenly matched to said current field;
at least one linear interpolator adapted to restore at least one missing line of said current field when said optimally spaced adjacent reference field is evenly matched to said current field; and
at least one edge-preserving filter operatively coupled between said at least one field motion compensator and said at least one linear interpolator, said at least one linear interpolator producing image output of progressive scanning format;
at least one frame buffer adapted to store said produced image output and unprocessed image input of progressive scanning format; and
at least one frame motion estimator operatively coupled between said at least one frame buffer and said at least one field motion estimator and adapted to generate motion vectors between adjacent image frames.

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (previously amended) A scan conversion apparatus comprising:

at least one field buffer;

at least one field motion estimator receiving image input of interlaced scanning format from said at least one field buffer, said image input including a current field and at least one reference field;

at least one field motion compensator operatively coupled between said at least one field buffer and said at least one field motion estimator, said at least one field motion compensator adapted to restore at least one missing line of said current field using motion information from an optimally spaced adjacent reference field when said optimally spaced adjacent reference field is unevenly matched to said current field;

at least one linear interpolator adapted to restore at least one missing line of said current field when said optimally spaced adjacent reference field is evenly matched to said current field;

at least one edge-preserving filter operatively coupled between said at least one field motion compensator and said at least one linear interpolator, said at least one linear interpolator producing image output of progressive scanning format;

at least one frame buffer adapted to store said produced image output and unprocessed image input of progressive scanning format;

at least one frame motion estimator operatively coupled between said at least one frame buffer and said at least one field motion estimator and adapted to generate motion vectors between adjacent image frames; and

at least one frame motion compensator operatively coupled between said at least one frame buffer and said at least one frame motion estimator and adapted to control the size of said motion vectors.

7. (canceled)

8. (canceled)

9. (canceled)

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (previously added) The scan conversion apparatus of claim 6 wherein said at least one frame motion compensator controls the size of said motion vectors based on a ratio of a distance between a desired frame location and a

reference frame location to a distance between said desired frame location and a current frame location.

22. (previously added) The scan conversion apparatus of claim 21 wherein said at least one frame motion compensator is adapted to produce composite image output between adjacent frames.

23. (previously added) The scan conversion apparatus of claim 22 wherein said at least one linear interpolator and said at least one frame motion compensator are adapted to produce image output in at least one order, said at least one order resulting in a moving image of a vertical scanning rate being different from the vertical scanning rate of progressively scanned image signals being stored in said at least one frame buffer.

24. (currently amended) A scan conversion apparatus comprising:

- at least one field buffer;
- at least one field motion estimator receiving image input of interlaced scanning format from said at least one field buffer, said image input including a current field and at least one adjacent reference field;
- at least one field motion compensator operatively coupled between said at least one field buffer and said at least one field motion estimator, said at least one field motion compensator adapted to restore at least one missing line of said current field using motion information from an optimally spaced adjacent reference field when said optimally spaced adjacent reference field is unevenly matched to said current field;
- at least one linear interpolator adapted to restore at least one missing line of said current field when said optimally spaced adjacent reference field is evenly matched to said current field;
- at least one edge-preserving filter operatively coupled between said at least one field motion compensator and said at least one linear interpolator, said

at least one linear interpolator producing image output of progressive scanning format; and

at least one frame buffer adapted to store said produced image output and unprocessed image input of progressive scanning format; and

at least one frame motion estimator operatively coupled between said at least one frame buffer and said at least one field motion estimator and adapted to generate motion vectors between adjacent image frames.

25. (new) The scan conversion apparatus of claim 24 further comprising:

at least one frame motion compensator operatively coupled between said at least one frame buffer and said at least one frame motion estimator and adapted to control the size of said motion vectors.